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Bard

Nikita Minin

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Russian Climate Politics in 2019: Concessions and Trade Offs

Climate change has gripped the thoughts of many nations. Particularly, a paradigm of thought vastly supported by scientific arguments, has opened up an awareness of the impacts of human action on the environment. From here, there are ways to precede: adapt with climate change and/or change the way we affect the climate: adaptation and or mitigation. In the face of these choices, Russia is a particularly dynamic case where the society is moving more towards an adaptive strategy. The country's vast oil reserves have made adaptive strategies more economically appealing. However, the economic models upon which decisions are being made do not consider the economic benefits to cutting emissions, especially over the long term. Such ecological economics is overshadowed by traditional economic models which are overvalued due to a lack of incorporated externalities.

Putin's most recent official view on climate change is that it does not pose a future threat to Russia, however, he does agree that we must "but, of course... look into it to make sure [threats] don't emerge in future" (Tass). This is a departure from his 2015 statements which argued climate change is one of the greatest threats humanity faces (The New York Times, "A Change in Tone..."). What are we to make of this flip-flop in opinion? It is likely that Putin and Russia are tossing and turning over what to do about climate change. On the one hand, fortunes are being made by politically important figures and the Russian economy is growing from the country's reserves of oil, gas and coal. On the other hand, prominent Russian industrialists fear losing market share in the new sectors of renewable energy, and a new tone, influenced by China's changing economy is sweeping Russian business. As of the current moment, the

economy continues to invest in oil and gas, on a path that could devastate the climate according to experts at the IPCC. Ultimately, Russia may benefit from climate change, as some think, or it may suffer greatly, but it appears certain that it will not change until it is proven that the costs of natural disasters will outweigh the profit made on industries such as gas and coal.

As of the current moment, for economic reasons, Russia is not staying on pace with the world's leaders on climate change goals. IPCC has declared a 2 °C budget, or in other words a limit of 2 °C rise in temperature above pre-industrial levels (Sharmina). This rise, "currently represents a commonly accepted threshold for 'dangerous climate change'". Russia's trajectory is far removed from the 2 °C target (Sharmina). Scholar Sharmina writes: "For a reasonable chance of staying within the 2 °C carbon budget constraint, [Russia] would need to undertake immediate, all-embracing and sustained reductions in its carbon emissions." Scholars Henry and Sundstrom iterate: "Russia's progress in reducing greenhouse gas emissions and continued participation in international agreements is likely to last only as long as these measures simultaneously serve the goals of economic modernisation" ("Russia's Climate Policy...") We must hope that Russia's economic and environmental goals coincide before we reach our limit of 2°C of warming.

Russia is not changing because it is not beneficial to change. As of 2008, expert in the field of Russian Climate policy, Anna Korppoo reports: "Climate change is not regarded as an acute environmental problem in Russia. Many Russian scientists believe that Russia could actually gain from climate change, and the IPCC is also predicting initial positive effects" (Korppoo "Russia and the Post..."). In fact, Russia will likely see a large portion of arable land become available. A study by University of Illinois researchers has predicted that arable land in Russia could increase from 37 to 67 percent in Russia (Zhang and Cai, "Climate Change

Impacts...”). In addition, the Arctic trade routes are becoming more navigable, and new opportunities for extraction of hydrocarbons are becoming available as polar sea ice shrinks. Not to mention, the Arctic opens up new opportunities for mining Arctic gold, silver, nickel, copper, titanium, iron, lead, coal, diamond, uranium and rare earth metals, which miners have long sought (Roston). Continued melting of this region would allow this “Polar Silk Road” to be freely navigable (Gehrke). These opportunities offer a glimpse into how Russia may be coming to terms with the effects of climate change.

It is argued by scholar Laura Henry that, in the case of Russia, “institutional change appears most likely when environmental and economic goals coincide” (Henry 756). Though, Russia does not wish to be a “rogue state” in the international debates about climate change (“Russia and the Post-2012...”), it has been shown by studies that the Russian government will lose GDP growth rates by 0.2—0.3 percentage points if the Paris climate accord were to be signed (Makarov et al.). Although climate accords are meant to be international endeavors, individual countries Russia can lose economically. By not signing the Paris agreement, Russia’s international reputation may be at stake, however, Russia could gain from not ratifying the Paris accord.

Yet, GDP is a system of valuation that has not evolved to consider ecological costs, and therefore Makarov et al.’s estimates do not properly estimate the true weight of signing the Paris Accord. Gross Domestic Product is a system of valuation, that as it stands finds its value in four components: 1. Private Consumption Expenditure (C) 2. Investment Expenditure (I) 3. Government Purchases of Goods and Services (G) 4. Net Exports (X – M)! These four components, with their corresponding variables are input into the equation **GDP** = C + I + G + (X – M) and compose the system of valuation we know as GDP. This equation, upon which an

economy is decidedly growing or receding, does not consider the values associated with environmental services. For example, boreal forests, of which those in Russia make up one-fifth of the world's cover, provide services estimated at \$250 billion per year. Such valuation can be attributed to services and benefits of not emitting carbon dioxide and setting emission standards corresponding to the Paris Accord.

Consider the costs of accelerated forest fires, which are argued to be a result of climate change. The calculations of the costs of forest management are not part of the GDP equation. Therefore, there are large parts of economic wealth and value, not incorporated in the GDP model. The GDP model of valuation is incomplete, and arguments such as Makarov's do not present the full picture of what the costs and benefits of signing the Paris Accord are.

We have a system of valuation that is misleading the Russian economy and the world's economy. Currently, fossil fuel companies, and fossil fuel economies are overvalued as their assets do not take into account the true costs of continuing to emit carbon and of climate change (Harvey). This phenomenon is referred to as the 'carbon bubble'. Since many companies' values are built on the assumption that all oil in the ground will be extracted and sold, author Bill McKibben explains: "in ecological terms it would be extremely prudent to *write off* \$20 trillion *worth* of those reserves. In economic terms, of course, it would be a disaster, first and foremost for shareholders and executives of companies like ExxonMobil (and people in places like Venezuela)" ("Tomgram: Bill McKibben..."). It is possible that Russia's wealth, if true costs are considered, would be greatly devalued. Without a proper economic model Russia will continue on the path that it is on, as the current figures make it economically beneficial to continue emitting.

A new economic model poses a threat to the Russian economy as it exists today. Russia's energy assets could become "stranded" if true ecological costs were considered. Russian oil and gas, under certain climate policies could be deemed "stranded assets" or "investments which are made but which, at some time prior to the end of their economic life.... are no longer able to earn an economic return, as a result of changes in the market and regulatory environment" ("Redrawing the Energy...").¹ In the case of Russia, emission caps and fines could make its reserves of oil and gas uneconomical. If environmental concerns that scientists are posing in terms of the threat of climate change are headed, as author Bill McKibben argues, 20 trillion dollars worth of oil reserves will become "stranded." A significant economic shift would occur in Russia if externalities were included in GDP and like models of valuation.

In a climate where the economic power largely rests on the use of natural resources such as oil, gas and coal, expert opinions protect the interests of the current economy. The opinions of Russian experts largely denies the ability of humans to affect the climate, negating anthropogenic climate change as a possibility, thus negating the potential consequences of continuing to emit carbon. These opinions protect the current economy's reliance on fossil fuels and also protects fossil fuels from becoming "stranded." In a study of the opinions of prominent, well-published Russian scientists, some who had published on environmental problems, and others who had involvement in the official climate policy of the Russian Federation, it was found that all denied any anthropogenic influence on the reduction of stratospheric ozone (Dronin and Bychkova 2101). This is the first sign of a scientific paradigm that denies major scientific research that supports how anthropogenic activity can affect the earth's atmosphere. Moreover, scholars Dronin and Bychkova report: "None of the experts believes[sic] that anthropogenic GHG

¹ "This might, for example, include power plants that are retired early because of new emissions regulations, or oil and gas fields that, though discovered, are not developed because climate policies serve to suppress demand" ("Redrawing the Energy...").

emissions could cause a steady increase of CO₂ concentration in the atmosphere. The GHG anthropogenic emissions are too small (less than 4%) as compared with natural annual flow of GHGs” (2101). This is the second serious claim which marks that Russian scientists largely deny the possibility of anthropogenic effects on global systems. We will see a change when the economic benefits of climate change mitigation outweigh the current benefits of business as usual or when it is undeniably necessary to incorporate ecological costs into the economic model.

There are pockets of Russian scientists who do believe that anthropogenic activity can affect earth systems; not surprisingly they live in areas where climate change is an undeniable reality. For example, a recent article surveying the future of St. Petersburg’s flood gates reports the opinion of Vladimir Kattsov, the head of St. Petersburg’s Voiekov Main Geophysical laboratory, to be that of a climate change believer. St. Petersburg is a city where increased flooding attributed to climate change has made the issue an undeniable concern. In predicting the future of St. Petersburg’s flooding, the scientist cited the IPCC’s prediction of sea level rises. Other experts located in St. Petersburg fear the effects of climate change on their city, such as “Drugachek” the official spokesperson for the St. Petersburg dam (Kozin). In an interview with the Moscow Times Drugachek stated: “The complex was built to last 100 years because, theoretically, nothing would change in that time... But if the climate changes, it is possible that the complex will have to be rebuilt.” For St. Petersburg, the economic realities of potential destruction of its priceless art and architecture instigated action. It is when economic incentives arise that we can expect voices, and opinions about climate change to change.

Other experts in St. Petersburg are also in agreement upon the state of a changing climate. A Minister of Regional Development, Oleg Panchuk, clearly conveys an acceptance of

climate change. In an interview with contractor CH2M Hill, he cites two-fold increases in flooding in St. Petersburg since the 1970s, and attributes it to climate change (“St. Petersburg Flood Barrier” 2:07-2:12). Of course, it could be that Oleg’s view of climate change are rooted in the thoughts of the majority of his country’s scientists who deny anthropogenic influence as a main causation. Yet, the issue of global warming is less important when the environment is undeniably changing. Therefore, one does not have to believe in global warming for economic and environmental concerns to coincide.

The Russian population itself is composed of people, who, despite their vulnerability to climate change, may protect Russia’s assets from becoming stranded. An ethnographic research project conducted on peoples of the environmentally vulnerable Northern regions of Russia revealed that attitudes towards climate change are largely those of non-belief and denial. In her article, “Imagining resilience: situating perceptions and emotions about climate change on Kamchatka, Russia” Jessica K. Graybill explains that: “Local narratives about climate change largely reflect climate skepticism, and anthropogenic climate change is rejected as explaining environmental changes.” She gives four reasons for this: “(1) climate is considered as naturally and cyclically changing, (2) humans are not considered a large enough force to alter natural climate cycles, (3) environmental problems are solvable with technology and (4) there is a lack of knowledge about climate change science.” We may see this change when the economies of these people are hurt by climate change.

In contrast, a more general opinion poll of Russia’s people reveals that a great many are aware of climate change and do fear its consequences. As of March 2007:

The Russian Public Opinion Research Centre conducted a poll on global warming in

March 2007, asking 1,600 Russians around the country to express their views. 62% of Russians believe that global warming is a real threat. 45% believe that global warming is already taking place, while 17% think that it is imminent. Only 6% argue that global warming will not occur at all. 59% believe that the impacts of climate change are negative, as opposed to 18% who believe that they are positive. 23% have no opinion. 45% of the public opposes spending tax payers' money on emission reduction.

It is a fact that near a majority of Russians, therefore, are not in support, for economic reasons, of climate change mitigation. Even within the Russian people, a tipping point has not occurred where economic arguments for climate change mitigation have become great enough to become a pressure on the state. This will change when climate change becomes an economic necessity to deal with.

The Russian government is a body that does not deny climate change, but largely prioritizes economic growth over environmental protection. "The official line adopted by the Russian government in interviews was that the administration supports the findings of the IPCC" [See for instance Submission from the Russian Federation, 24 August 2007, the United Nations Framework Convention on Climate Change, Dialogue on long-term cooperative action to address climate change by enhancing implementation of the Convention.] However, despite these remarks, the 2000s saw Russia prioritize economic growth over environmental governance (Henry 763).² Russia does invest in the environment currently, yet the level of investment is superficial compared to the GDP.

² See also, "Russia: Environmental Issues." *Energy Information Administration*, 26 May 2007, www.lehman.edu/faculty/rwhittaker/Day02-Research/Russia_%20Environmental%20Issues.pdf. Accessed 28 Apr. 2019.

Although Russia is investing in the environment, these offsets are an example of Russia's adaptive approach. Instead of divesting from fossil fuels Russia is investing in the environment by reducing pollution, boosting recycling and reforestation. In 2018 the country allocated 1.55 trillion rubles (22 billion) to an environmental program which created the mentioned environmental investments. Compare this to a 1,577 billion dollar economy in 2019, in GDP ("Russia GDP"). Such investment, met with continued use of oil and gas shows that the country is working within a profit margin, where the economic gains of oil and gas are greater than the costs of mitigating environmental concerns which they cause. However, it is likely that the country is not operating on an economic system that incorporates true costs, and is therefore entrenched in the carbon bubble.

The media is a strong component of maintaining a paradigm that protects Russia's ability to avoid addressing climate change. Though the media is officially censorship free, and is "formally free" (Poberezhskaya 98), journalist and scholar Nadezhda Azhgikina argues that the media, with the introduction of the free-market in Russia during the 90s, "lost its real independence and quite quickly became a convenient tool for elite power and structure" (Azhgikhina 1248). Additionally, Poberezhskaya argues that the state has a strong influence on the media. She explains: "Mickiewicz (2008: 27) supports this idea by stating that the majority of influential media organs are to a great extent controlled by the state or 'clients of the government'" (99). She continues: "If the argument of the state's influence over media coverage of climate change is correct, then media policy will follow state policy" (101). Therefore, we can expect that when the state's views on climate change occur, this will be reflected in the media.

The media in Russia has been argued by scholar Marianna Poberezhskaya, to be a tool of state power that has operated to keep climate change out of the public discourse. This serves to

protect the current economic system. She points to scholars that bring attention to how bias in the media can be reflected not only in what is covered and how, but by what is omitted, arguing that Russia's state has had such an influence on the media and has curbed coverage of the potentially controversial issue of climate change. In comparing the number of articles covering climate change in different countries, the number in Russia is far below countries such as the UK. For example, in Russia, 127 articles was never exceeded during coverage of climate change events such as the Kyoto Protocol, whereas in the UK, as many as 1778 articles were published (107). Additionally, The Moscow heat wave, and forest fires of 2010, brought climate-related news to the center of public discourse (Poberezhskaya, 102). However, scholar Poberezhskaya explains that, "in many cases articles did not refer to the direct correlation between abnormal weather patterns and climate change" (103). The media in Russia will not change until it is economically beneficial to advertise and discuss climate change.

Although environmental costs could prove that Russia actually has to gain from signing the Paris Accord, GDP damage could prove that it has to gain less than with concessions that account for this loss. It seems that the rest of the world, which is in more perilous and imminent danger due to climate change must be able to offer Russia economic incentives to sign the Paris Accord. Wealthy countries such as the US, Germany and France must make sure that the Paris Accord is a fair agreement, working to counterbalance the loss of GDP to Russia with trade deals, investment opportunities and other concessions.

As we see in the Paris Accord, it may be profitable for Russia to continue emissions that push our world out of a safe zone of warming. It is therefore necessary for international negotiations to account for this. As in the Kyoto protocol, successful climate agreements must offer Russia economic incentive to ratify. The Kyoto protocol was supported by Russian

businesses as it offered them investment opportunities (Henry 1300). Though the Paris accord is gaining traction in the industrialist community, full ratification may not occur if it possible to argue that Russian GDP will be damaged.

Smart climate policy can work to mitigate problems. Russia's powerful position during the Kyoto protocol was beneficial to the country, showing that climate policy can in fact bring benefits under the right conditions. "...over those years the government used its key position to acquire international diplomatic concessions on other issues such as conditions of entry into the World Trade Organisation" (Henry & Sundstrom 2010, pp. 105–37). If countries that will lose from climate change are able to ally with powerful countries that can provide Russia with the right concessions, climate policy can work to mitigate the holes in our current system.

Some forces have already aligned and are bringing a tide of change. Business and environmental concerns have begun to overlap and are leading to the Paris Climate Accord coming closer to being ratified by the Russian Federation. In January of 2019, the Russian Union of Industrialists and Entrepreneurs, a powerful lobby group, said its members support ratification of the Paris Climate Accord, "citing concerns over economic restrictions and competitiveness" (Ayres). Journalist Sabra Ayres also states that Russian businesses recognize that "future trade deals with the European Union could be in jeopardy without ratification." Perhaps the climate accord just needed time for its benefits to become known, or perhaps it still needs to be amended to become truly appealing to Russia.

A new wave of thinking about energy could prove to shift some of the economy towards renewables, as incentives to be more "green" are becoming economically feasible in Russia. As Russia looks to China "as a role model for developing its economy", reports Sabra Ayres, it is beginning to realize that there is a future in renewable energy (Los Angeles Times). Angelina

Davydova, director of the Office of Environmental Information, a nongovernmental environmental policy group in Russia, in an interview with the Los Angeles Times, states:

“Russia sees itself as an energy superpower, but more people are seeing that energy is not just oil, gas and coal... More and more people in the government and in state industries now have the understanding that there is a future in renewables.”

Russia wants to trade internationally, but wants to be more or less on their own regarding climate. They are climate-isolationist but economically expansionist. How does this model fit into the Paris Accord? It seems that being isolationist on climate runs against signing an international agreement. However, here we see once again Russia has more to lose economically due to the Paris Accord than they have to gain by isolating. In other words, their economic expansionism wins out against their climate isolationism. This is just one more example of Russia being more concerned with economics than with climate itself.

Works Cited:

Works Cited

- ABC News. "Russian heatwave killed 11,000 people." *ABC News*, ABC Australia, 17 Sep. 2010, <https://www.abc.net.au/news/2010-09-18/russian-heatwave-killed-11000-people/2265184>.
- Ayres, Sabra. "Russia looking to ratify Paris climate agreement as U.S. continues withdrawal." *Los Angeles Times*, 16 Feb. 2019, www.latimes.com/world/europe/la-fg-russia-climate-change-20190216-story.html.
- Azhgikhina N "The struggle for press freedom in Russia: Reflections of a Russian journalist." *Europe-Asia Studies* 59(8), 2007.
- Butler, Rhett. "Boreal forests worth \$250 billion per year worldwide." *Mongabay*, 25 Sept. 2006, news.mongabay.com/2006/09/boreal-forests-worth-250-billion-per-year-worldwide/. Accessed 29 Apr. 2019.
- Chrysavgis, Dr. John. "Pope and Patriarch: A common declaration for a shared world" The Forum on Religion and Ecology, Yale (Crux), Yale School of Forestry and Environmental Studies, 1 Sep. 2017, <http://fore.yale.edu/news/item/pope-and-patriarch-a-common-declaration-for-a-shared-world/>.
- Coyer, Paul. "Putin's Holy War And The Disintegration Of The 'Russian World.'" *Forbes*, June-July 2015, www.forbes.com/sites/paulcoyer/2015/06/04/putins-holy-war-and-the-disintegration-of-the-russian-world/#2dc1e0a4285b.
- Ecumenical Patriarch Bartholomew. "MESSAGE: By His All-Holiness Ecumenical Patriarch Bartholomew to the United Nations Conference of Parties (COP 24)" *The Forum on Religion and Ecology at Yale*, Yale School of Forestry and Environmental Studies, 10 Dec. 2018, http://fore.yale.edu/files/Message_to_COP24.pdf.

Gehrke, Joel. "Russia and China close to deal on 'very big' Arctic projects that would move 'natural gas.'" *Washington Examiner* [Washington, D.C.], 19 Apr. 2019, www.washingtonexaminer.com/policy/defense-national-security/russia-and-china-close-to-deal-on-very-big-arctic-projects-that-would-move-natural-gas.

Harvey, Fiona. "'Carbon bubble' poses serious threat to UK economy, MPs warn." *The Guardian*, 6 Mar. 2014, www.theguardian.com/environment/2014/mar/06/carbon-bubble-threat-uk-economy-fossil-fuels-mps. Accessed 20 Apr. 2019.

Henry, Laura. "Between transnationalism and state power: the development of Russia's post-Soviet environmental movement." *Environmental Politics*, Volume 19, Issue 5, 17 Sep. 2010.

Henry, Laura A., and Lisa McIntosh Sundstrom. "Russia's Climate Policy: International Bargaining and Domestic Modernisation." *Europe-Asia Studies*, vol. 64, no. 7, 30 July 2012, pp. 1297-322. *University of British Columbia*, politics.sites.olt.ubc.ca/files/2017/01/Henry-and-Sundstrom-Europe-Asia-Studies-2012.pdf. Accessed 21 Apr. 2019.

Jha, Alok. "Climate change increased likelihood of 2010 heatwave - study." *The Guardian*, 21 Feb. 2012, <https://www.theguardian.com/environment/2012/feb/21/climate-change-russian-heatwave>.

Korppoo A "Russia and the post-2012 climate regime: Foreign rather than environmental policy." *UPI Briefing Paper*, 23, The Finnish Institute of International Affairs, 2008.

Kozin, Daniel. "St. Petersburg's Dam is Holding Back the Floods, for Now." *The Moscow*

Times, 21 February, 2019, <https://www.themoscowtimes.com/2019/02/21/st-petersburgs-dam-is-holding-back-floods-for-now-a64066>.

Kuchma, Anna. "Where does the Russian Orthodox Church get its money from?" *Russia Beyond*, 09 March, 2016, https://www.rbth.com/business/2016/03/09/where-does-the-russian-orthodox-church-get-its-money-from_574079.

Makarov, I. A., et al. "Impacts of Paris Agreement on Russian Economy." *Voprosy Ekonomiki*, vol. 4. *Ideas*, ideas.repec.org/a/nos/voprec/2018-04-4.html. Accessed 18 Apr. 2019.

McKibben, Bill. "Tomgram: Bill McKibben, Why the Energy-Industrial Elite Has It In for the Planet." *TomDispatch.com*, 7 Feb. 2012, www.tomdispatch.com/archive/175499/. Accessed 21 Apr. 2019.

The Moscow Times. "Russian Ministry Warns of Coming Environmental Apocalypse Fuelled by Climate Change." 6 Sep. 2018, <https://www.themoscowtimes.com/2018/09/06/russian-ministry-warns-coming-environmental-apocalypse-fueled-climate-change-a62804>

The New York Times. "A Change in Tone for Vladimir Putin's Climate Change Pledges." 1 Dec. 2015, <https://www.nytimes.com/interactive/projects/cp/climate/2015-paris-climate-talks/vladimir-putin-climate-change-pledges-russia>.

Poberezhskaya, Marianna. "Media Coverage of Climate Change in Russia: Governmental Bias and Climate Silence." *Public Understanding of Science*, vol. 24, no. 1, Jan. 2015, pp. 96–111, doi:10.1177/0963662513517848.

"Putin inspected the newly rebuilt village Upper Vereya." *RIA News*, 1 Nov. 2010. *RIA News*, ria.ru/20101101/291464922.html. Accessed 29 Apr. 2019.

Radio Free Europe. "Putin Sets Out Major Upgrade To Arctic Facilities, Assets As Nations Eye

- Area Resources.” 09 Apr. 2019, <https://www.rferl.org/a/putin-sets-out-major-upgrade-to-arctic-facilities-assets-as-nations-eye-area-resources/29871273.html>.
- "Redrawing the Energy-Climate Map." *International Energy Agency*, 10 June 2013, www.iea.org/publications/freepublications/publication/WEO_Special_Report_2013_Redrawing_the_Energy_Climate_Map.pdf. Accessed 21 Apr. 2019.
- Roston, Eric. "How A Melting Arctic Changes Everything, Part III: The Economic Arctic.” *Bloomberg*, 29 Dec. 2017, <https://www.bloomberg.com/graphics/2017-arctic/the-economic-arctic/>.
- Roth, Andrew and Harriet Sherwood. "Russian Orthodox Church cuts ties with Constantinople.” *The Guardian*, 15 Oct. 2018, <https://www.theguardian.com/world/2018/oct/15/russian-orthodox-church-cuts-ties-with-constantinople>.
- "Russia: Environmental Issues." *Energy Information Administration*, 26 May 2007, www.lehman.edu/faculty/rwhittaker/Day02-Research/Russia_%20Environmental%20Issues.pdf. Accessed 28 Apr. 2019.
- "Russia GDP." *Trading Economics*, 2019, tradingeconomics.com/russia/gdp. Accessed 29 Apr. 2019.
- Salnitskaya, Vera. "New warning about climate change linked to peat bogs." *The Siberian Times*, 5 May 2015, siberiantimes.com/ecology/opinion/features/f0099-new-warning-about-climate-change-linked-to-peat-bogs/. Accessed 23 Apr. 2019.
- Sharmina, Maria. "Low-carbon scenarios for Russia's energy system: A participative backcasting approach." *Energy Policy*, vol. 104, May 2017, pp. 303-15. *ScienceDirect*, www.sciencedirect.com/science/article/pii/S0301421517300848. Accessed 20 Apr. 2019.
- Shvidenko, Anatoly, and Dimitry Schepaschenko. "Climate Change and Wildfires in Russia."

Contemporary Problems of Ecology, vol. 6, no. 7, 5 Jan. 2014,

www.researchgate.net/publication/259369858_Climate_Change_and_Wildfires_in_Russia

a.

Soroka, George. "Putin's Arctic Ambitions." *Foreign Affairs*, 5 May 2016,

www.foreignaffairs.com/articles/russia-fsu/2016-05-05/putins-arctic-ambitions.

Stroop, Christopher. "Putin Wants God (or at Least the Church) on His Side." *Foreign Policy*, 10

Sep. 2018, <https://foreignpolicy.com/2018/09/10/putin-wants-god-or-at-least-the-church-on-his-side/>.

Tass Russian News Agency. "Putin sees no threat in Paris agreement on climate change." *Tass*,

26 December, 2018, <http://tass.com/world/1037900>.

Vatansever, Adnan. "Medvedev's Climate Moment." *Carnegie Endowment for International*

Peace (The Moscow Times), 27 Aug. 2010,

<https://carnegieendowment.org/2010/08/27/medvedev-s-climate-moment-pub-41453>.

"Vladimir Putin meets with fire victims in Upper Vereya." *Visca.ru*, 16 Sept. 2010,

xn--80ady2a0c.xn--p1ai/2826-putin.html. Accessed 29 Apr. 2019.

Zhang, Xiao, and Ximing Cai. "Climate change impacts on global agricultural land availability."

Environmental Research Letters, vol. 6, no. 1, 18 Mar. 2011. *IOP Science*,

iopscience.iop.org/article/10.1088/1748-9326/6/1/014014/meta. Accessed 19 Apr. 2019.